

24
FOR OFFICIAL USE

R E P O R T S

TO THE

LOCAL GOVERNMENT BOARD

ON

PUBLIC HEALTH AND MEDICAL
SUBJECTS.

(NEW SERIES No. 31.)

Dr. R. J. Reece's Report to the Local Government Board on the sanitary circumstances and administration of the Clutton Rural District, and of that portion of the Ecclesiastical parish of Peasedown St. John which is situated in the Bath Rural District.

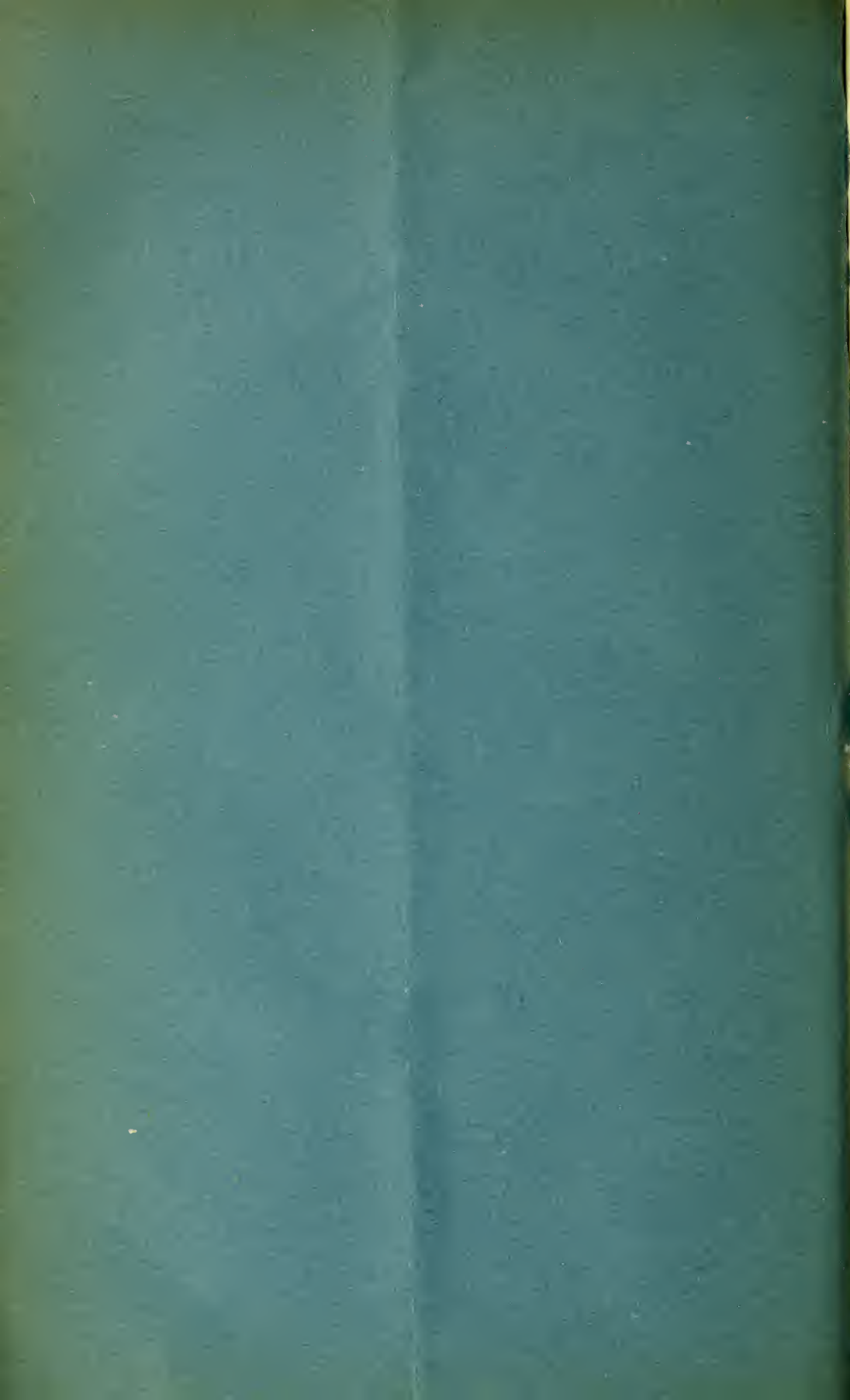


LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C. ; or
OLIVER & BOYD, TWEEDDALE COURT, EDINBURGH ; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1910.

Price Fivepence.



Dr. R. J. Reece's Report to the Local Government Board on the sanitary circumstances and administration of the Clutton Rural District, and of that portion of the Ecclesiastical parish of Peasedown St. John which is situated in the Bath Rural District.

ARTHUR NEWSHOLME,
Medical Officer,
26 May, 1910.

IN January 1909 the Clerk of the County Council of Somersetshire wrote to the Local Government Board stating that he had been directed by his council to make a formal representation to the Local Government Board, pursuant to section 19 (2) of the Local Government Act 1888, that the Public Health Act 1875 had not been properly put in force within the parishes of Camerton (which includes part of the ecclesiastical parish of Peasedown St. John), Farmborough, High Littleton, Paulton and Timsbury in the Clutton Rural District. In his letter the Clerk of the County Council called the Board's attention in particular to the water supply of the parish of Chew Magna; and he forwarded a report made to the County Council by Dr. T. H. C. Stevenson, and stated that from this report there appeared to be no building byelaws in force in the Rural District of Clutton. The Clerk of the County Council also informed the Board that he had been directed to make a complaint to the Local Government Board on the above matters under section 299 of the Public Health Act 1875. Later, in June 1909, he stated he was directed to draw the attention of the Board to the fact that Dr. Stevenson's report contained evidence of breaches of the Rivers Pollution Prevention Acts at Timsbury, Farmborough, Paulton and possibly at High Littleton, and to inquire whether the results which the Council Council desires to bring about are likely to be secured in due course at the instance of the Board, or whether the Board would recommend the County Council to take action under the Rivers Pollution Prevention Acts.

L O N D O N :
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C.; or
OLIVER & BOYD, TWEEDDALE COURT, EDINBURGH; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1910.

Price Fivepence.

No. 31.

(15659—21.) Wt. 32365—363, 500, 5/10, D & ,

A

After some correspondence the Board, in July, 1909, informed the Somersetshire County Council and the Clutton Rural District Council that they intended to instruct one of their medical inspectors to make inquiry into the sanitary circumstances and administration of the Clutton Rural District; and as the ecclesiastical parish of Peasedown St. John, concerning the sanitary condition of which complaints had been made to the Board by the vicar, is partly in the Clutton Rural District and partly in the Bath Rural District, the council of this latter district was informed that the inquiry would extend to that portion of the ecclesiastical parish of Peasedown St. John which is situated in its district.

I received instructions to make this inquiry, and visited the districts in November and December of last year.

The County Council does not allege in what particular respects default has been made by the Clutton Rural District Council. It refers the Board to a report made to the County Council by Dr. T. H. C. Stevenson dealing with the sanitary condition of certain parishes; and to the reports of Mr. Brew, Medical Officer of Health to the Clutton Rural District Council, for evidence that "other matters affecting the public health of the Rural District of Clutton" "require to be remedied"; but only one specific complaint of the latter officer is referred to, viz., the water supply of the parish of Chew Magna. Dr. T. H. C. Stevenson held office under the Somersetshire County Council as School Medical Officer, and at the time when he, at the request of the County Council, made inspection of several parishes in the Clutton Rural District, the County Council had not appointed a medical officer of health for its county.

TOPOGRAPHY.

The Clutton Rural District, situated towards the north-eastern part of the County of Somerset, has a maximum length and breadth of about 12 and 10 miles respectively and an area of 42,913 acres.

The Clutton Poor Law Union includes the Clutton Rural District and two urban districts, Radstock and Midsomer Norton, which have been formed from civil parishes in the Union. Both these urban districts are situated at the south-eastern corner of the Union; and the latter enfolds and cuts off the parish of Chilcompton from the remainder of the rural district. Adjoining the Clutton Rural District is the Bath Rural District.

GEOLOGY.

The geological features of the district are somewhat complex; but in view of their bearing on local questions of water supply and sewage disposal they are of considerable importance. The whole district rests on rocks of the carboniferous period; but these are, over the greater part of the area, concealed by superjacent secondary strata. The carboniferous limestone rises to the surface on the extreme southern boundary

of the district near Chilcompton and further to the south forms the flanks of the Mendip Hills; the central axis of the range is formed of old red sandstone, with silurian and igneous rocks in places. The beds of the carboniferous limestone on the northern flanks of the Mendips dip at a high angle to the north. They are traversed by numerous joints and fissures. Some of these are filled by deposits of later age, often forming veins of spar and sometimes containing metallic ores; others, which may attain the size of large caverns, remain open and afford a free passage to water. Hence the limestone beds as a whole are freely pervious to water; this may sink in at one point and reappear at another, and may have undergone but little filtration in its passage through the intervening ground.

Above the carboniferous limestone and millstone grit, which latter is in this region not a prominent feature, are the coal measures. These measures extend beneath almost the whole of the Clutton Rural District; they are exposed on the surface over a comparatively limited area about Hallatrow, High Littleton, Temple Cloud, Clutton and Pensford. In the Somerset coalfield the coal measures consist of an upper and a lower series of productive beds separated by a bed of sandstone—the Pennant rock. The coal seams are not very thick, and the beds of the lower series on the southern border of the coalfield are much broken and disturbed.

The secondary beds are unconformable to the carboniferous strata, *i.e.*, they lie nearly horizontally across the up-turned edges of the latter; at the junction they take the form of a conglomerate, *i.e.*, a consolidated gravel bed containing fragments of the older rock. The new red marl (Keuper) covers a considerable area, especially in the north-west of the district. Where it rests on the carboniferous limestone, as at Chilcompton, it takes the form of a hard conglomerate (dolomitic conglomerate). At its junction with the coal measures much water, locally called “red-ground-water,” is apt to be met with in pit-sinking. The lower lias, consisting of alternating bands of clay and limestone, also covers a considerable area in the district. The inferior oolite, a fissured limestone, occurs on the eastern border of the district about Camerton; and with other members of the oolite series forms the hills eastward from that place towards Bath.

INDUSTRIES.

The population to the eastern side of the district is engaged mainly in coal mining; the population of the remainder of the district, for the most part, follow pastoral pursuits of which dairy farming is the most important. Cheese and butter are manufactured and large quantities of milk are sent daily to London, Bristol, Cardiff and other centres of population. There is a boot and shoe manufactory at Paulton, some iron ore working at Chew Stoke, and in certain parts of the district stone quarrying is carried on.

STATISTICS.

The population at the Census of 1841 was 20,234; it decreased until 1881, when it numbered 16,625. In 1891 it was 16,425; at the Census of 1901 it was 16,599.

The following table gives the names, the acreage, the present assessable and rateable values of the several parishes of Clutton Rural District, as well as the populations of these parishes at the 1891 Census and the 1901 Census respectively.

Parishes.	Assess- able Value, Sept. 1909.*	Rateable Value.*	Population Census.		Area in Acres.	Remarks.
			1891.	1901.		
	£	£				
1. Camerton ...	7,061	7,761	1,877	1,772	1,782	Mainly Coal Mining Parishes.
2. Clutton ...	5,249	6,125	1,095	1,265	1,698	
3. Farmborough ...	3,355	4,326	895	948	1,508	
4. Farrington Gurney	3,037	3,558	562	630	928	
5. High Littleton ...	3,280	4,288	798	812	1,303	
6. Paulton ...	6,182	7,093	2,301	2,355	1,055	
7. Timsbury ...	5,139	6,017	1,390	1,515	1,161	
	33,303	39,168	8,918	9,297	9,435	
8. Cameley ...	1,902	2,623	465	403	1,648	Mainly Pastoral Parishes.
9. Chelwood ...	1,213	1,654	131	155	1,118	
10. Chew Magna ...	7,908	10,810	1,481	1,492	4,623	
11. Chew Stoke ...	4,603	5,985	653	635	2,162	
12. Chilcompton ...	3,463	4,074	648	616	1,257	
13. Compton Martin ...	2,612	3,666	344	393	2,614	
14. East Harptree ...	3,478	4,618	604	595	2,595	
15. Hinton Blewett ...	2,272	2,939	176	170	1,130	
16. Litton ...	2,619	3,373	214	154	1,125	
17. Nempnett Thrubwell.	2,956	3,706	233	216	1,800	
18. North Widcombe ...	589	797	61	39	711	
19. Norton Malreward...	1,963	2,701	162	156	1,676	
20. Publow ...	1,765	2,321	492	429	1,375	
21. Stanton Drew ...	4,714	5,992	690	712	2,078	
22. Ston Easton ...	1,887	2,858	373	302	1,430	
23. Stowey ...	1,561	2,317	183	177	1,269	
24. Ubley ...	2,691	3,338	250	332	1,821	
25. West Harptree ...	2,386	3,403	347	326	3,046	
	50,582	67,175	7,507	7,302	33,478	
Total ...	83,885	106,343	16,425	16,599	42,913	

From this table it may be seen that although the total population of the rural district had only increased 174 in the intercensal period 1891-1901, yet the coal mining parishes had actually increased by 379, and the pastoral parishes diminished by 205 persons. The only coal mining parish which shows a

* Figures supplied by the Clerk of the Clutton Rural District Council.

decrease is Camerton, and in this parish the population has largely increased since the last census was taken.

During the last few years there has been a growth of the coal mining industry in the district, due to new pits being sunk and to abandoned mines having been re-opened and worked, and the augmentation seems likely to be continued. The result will probably be that the population of the mining villages will be shown to have increased at the next census.

During the seven year period 1902-1908 the number of births registered in the district was 3,315, and the number of deaths from all causes was 1,526. Of these deaths, 98 were due to zymotic diseases, and 258 occurred among children under one year of age.

From these figures, the rates being calculated on the 1901 census population, it appears that during the period in question, the mean annual birth-rate was 28·5, the mean annual death-rate from all causes was 13·1; the infantile death-rate was 77·8 per 1,000 births, and the number of deaths from acute infectious diseases was relatively low. These figures compare favourably with those for rural England and Wales.

Unfortunately it has not been found possible to contrast the rates for the coal-mining and pastoral portions of the district.

In the census of 1901 the total tenements are given as 3,804, and the number of tenements having less than five rooms as 1,752.

From information supplied to me by the Clerk of the Rural District Council it appears that for the whole district the number of houses rated at less than £5 amounts to nearly 40 per cent., and the number of houses rated at under £10 is 81·2 per cent., of the total number of houses in the district.

The Clerk informs me that a rate of 1*d.* in the £ produces about £350.

WATER SUPPLY.

Except towards the eastern side of the district, which is undermined by coal workings, there is ample water to be procured. At the western side is the large storage reservoir of the Bristol Waterworks Company, known as Blagdon Lake, and a good deal of the natural water supply of the neighbourhood finds its way to this reservoir.

The parishes of Cameley, Chilcompton, Clutton, Farmborough, Farrington Gurney, High Littleton, Paulton, Ston Easton and Timsbury are supplied from a source—the Gurney Slade supply—which is the property of Downside College at Stratton-on-the-Fosse, in the Shepton Mallet Rural District. There is a small public supply at the hamlet of Bishops Sutton in the Chew Magna parish; this is obtained from the mains of the Bristol Waterworks Company which pass through the hamlet. In the parish of Camerton there is a small supply to a few houses known as New Buildings; and there is a supply to Peasedown. Peasedown St. John is an ecclesiastical parish, formed in 1874, comprising portions of the three civil parishes, of Camerton in the Clutton Rural District, and of Wellow and of Dunkerton in the Bath Rural District, and having at the Census of 1901, a population of 1,505 and 343 inhabited houses.

The village of East Harptree has a water supply provided by a landowner in the parish; and similarly a local landowner has provided a supply for the hamlet of Stowey. The supplies are said to be abundant in quantity and the water to be of good quality.

The remainder of the rural district derives its supply of water from public and private wells. Most of these wells are affected by dry seasons when there is a scarcity of water; and many wells, owing to their position, are liable to pollution. The public well at Chew Magna is the most conspicuous instance of this and reference to it will be made later.

Chilcompton.—In June 1903 the Clutton Rural District Council applied to the Board for sanction to borrow £1,650 for a water supply to Chilcompton. This was for the provision and the laying of 3-inch mains and the necessary fittings. The water was to be purchased from the Midsomer Norton Urban District Council, and was to be supplied by meter; the water supplied by the Urban District Council being derived from the Downside College supply from Gurney Slade. This loan was sanctioned by the Board on 14th April, 1904.

Peasedown St. John.—In 1898 the medical officer of health for the Clutton Rural District reported on an outbreak of typhoid fever in a group of houses at Red Post, Peasedown; due, apparently to polluted drinking water. Two wells were suspected, but it was not clear which was implicated; one of these was on one side of the road in the Clutton Rural District, and the other on the other side of the road in the Bath Rural District. In concluding his report the medical officer of health drew attention to the scarcity of water at Red Post, and said that it would be easy and not expensive to supply the district with water from the Radstock Urban District supply.

Complaints continued to be made to the Board with regard to the absence of a proper water supply in the ecclesiastical parish of Peasedown St. John, and in March 1901, one of the Board's Engineering Inspectors visited the locality and conferred with the two Rural District Councils of Bath and Clutton, and with others on the subject.

Finally in 1905 a joint scheme of water supply was agreed to and a Statutory Joint Committee was appointed by the Bath and Clutton Rural District Councils, by an agreement under Section 57 of the Local Government Act 1894, to provide a public water supply to this area. Water is purchased from the Radstock Urban District Council; and it is supplied to Peasedown by gravitation.*

I am informed that 227 houses in Camerton, 26 in Dunkerton and 162 in Wellow parish are supplied from this source. The supply is mainly from standpipes; but some houses are supplied direct.

Two loans have been sanctioned by the Local Government Board in connexion with this supply to Peasedown. The first in

* The Radstock water supply comes from springs in the Old Red Sandstone on Mendip.

1905 was for £3,134 to instal the supply. It was found, however, that in the daytime the pressure in the mains became too low to afford an efficient supply to Peasedown; and a second loan in 1908 for £1,050 was sanctioned for the construction of a reservoir, to hold 175,000 gallons, on Huddox Hill above Peasedown. This work has only recently been completed.

The proportions of the loans relating to the Clutton portion of Peasedown St. John are £1,078 and £357.

The "Eight Parishes" Supply.—In December of the year 1902, at a time when the County Council was directing the attention of the Rural District Council to the defective water supplies of several places including Farrington Gurney, the latter council applied to the Board for sanction to borrow £2,500 for the purposes of a water supply for the parish of Farrington Gurney. A local inquiry was held by one of the Board's Engineering Inspectors; and as a result of that inquiry the Board, not being satisfied with the scheme, withheld their sanction.

In July, 1904, the Clutton Rural District Council wished to borrow £4,804 for a joint water scheme for the parishes of Farrington Gurney and Paulton. Before the necessary local inquiry could be held the council, in the December of that year, proposed to increase the scope of the scheme, and to supply the parishes of Cameley, Clutton, Farrington Gurney, Paulton, High Littleton, Ston Easton, Timsbury and Farmborough from the source at Gurney Slade.* The supply in question is the property of Downside College, and a provisional agreement was entered into with the College by the Rural District Council for the proposed supply. The College at that time was building a new reservoir, capable of holding 600,000 gallons of water, and it was agreed that the Rural District Council should take a minimum of 70,000 gallons per day, and should have the right to take as much as 150,000 gallons per day. The College agreed to keep at least 400,000 gallons in their reservoir for the use of the Rural District Council. The Clutton Rural District Council therefore applied to the Board for sanction to borrow £22,000 for the necessary works. The Board, after local inquiry, approved generally of the scheme but deferred sanction to the loan until the Downside reservoir should have been tested. On this being done, it was found to be defective; but owing to the delay which was being caused the Board sanctioned the loan on 8th January 1907, so that the Council's part of the work might be in progress during the building of the new reservoir by the Downside College authorities. The Council's scheme includes the provision of a compensation reservoir of 176,000 gallons at Timsbury. This scheme is locally known as the "Eight Parishes Supply."

The well and pumping station are placed in a narrow valley, known as "Gurney Slade Bottom," whose sides have a steep declivity. At the pumping station are two sets of treble ram

* In the council's application the parish of Chilcompton was mentioned as one of the parishes to be supplied; a previous loan, however, had already been sanctioned by the Board for the water supply of this parish, and in subsequent correspondence the Council substituted the name of Ston Easton for that of Chilcompton.

pumps worked by a gas engine. These pumps are capable of delivering 20,000 and 10,000 gallons of water per hour, respectively, into the reservoir, the bottom level of which is 713 feet above O.D., whence it flows by gravitation to the mains. The reservoir has a capacity of 600,000 gallons, and is substantially constructed, and is covered over.

The well is 36 feet deep and 8 feet in diameter. It is stained with 9 inches of brickwork, set in cement, to near the bottom. One heading, about halfway down the well, is driven in a north-easterly direction for about 120 feet long; and near the bottom another, about 60 feet long, is driven to the S.W. A bore hole carried down about a 100 feet from the bottom of the well, in carboniferous limestone, did not materially increase the yield of water. The well is, apparently, fed by a very strong spring and the supply of water very greatly exceeds the demand. Owing to the irregular dip of the geological strata in the neighbourhood it is by no means easy to determine with any degree of accuracy the extent of the gathering area of this supply. It is clear, however, that the villages of Gurney Slade and Binegar are placed on the gathering area. They are both contained in the civil parish of Binegar, in the Shepton Mallet Rural District, a parish which, at the Census of 1901, had a population of 252 persons and 50 houses. Most of the houses are in the village of Gurney Slade, and since 1901 a considerable number of houses have been, and several are being, erected in this village. The housing accommodation is not yet sufficient to satisfy the demand for dwellings. The population has materially increased during the last few years, and apparently the increase will continue for some time to come.

The conditions prevailing at these villages, particularly at Gurney Slade, are such as to render pollution of the underground water possible. The villages are undrained and unscavenged, and there are many cesspit privies, slop water is thrown on the ground near houses, and there is an absence of ashbins. One row of 12 comparatively new cottages is drained to a cess-pool, the overflow of which runs over the ground surface and ultimately finds its way to a gutter by the roadside. At the time of inspection this was in a very foul and stinking condition. Alongside the road leading from this village to the Gurney Slade well, there are small groups of houses which have no drainage; and close to and at a higher level than the well there are several cottages. Some of these have been recently erected; although occupied, they were not altogether completed at the time of my visit in December. The slop drainage from the cottages is poured into a soak-away pit; and although pail closets have been provided, there is but little garden space for the disposal of the contents of the pails. At other cottages, not very distant from the well, there are cesspit privies. At none of these cottages is there any systematic removal of excrement and house refuse.

On the hill to the north of the well are two farms, one of which has been bought by the College, and on the hill to the south is another farm. The farms are to all intents and purposes undrained.

Close to but higher up the valley than the well, the College has bought small strips of land and several cottages, with a view to protect its water supply.

It is clear that if the gathering area is to be rendered reasonably free from pollution, the villages of Gurney Slade and Binegar should be sewerred, and scavenged; the absence of a proper sewerage scheme and of efficient scavenging must necessarily increase the risk of pollution of the water supply.

Refuse is commonly thrown on heaps near the houses, and it was evident on inspection that the contents of the ash heaps were not limited to dry refuse and ashes.

Owing to the existence of fissures or "swallow-holes" in the geological strata, and to the diverse character of the dips of these strata, it is possible that pollution might be carried to this water supply from yet other sources at a considerable distance. A little over a mile to the north-west of the pumping station is Letchmere Water, sometimes called Emborough Lake. The overflow from this lake flows along a brook or ditch to the eastward, and apparently this is on the opposite slope to that of the gathering area of the Gurney Slade supply. Nevertheless, a short distance from the point at which the overflow leaves the lake there is a fissure in the strata, and sometime back the whole overflow suddenly disappeared down this swallow-hole.* At a corresponding time the water from the pumping station was found to be slightly turbid. After very considerable trouble the College authorities succeeded in "stopping" this fissure, and the water resumed its normal flow along the brook or ditch, and the supply from the pumping station ceased to be turbid.

It is quite a common thing in this part of the country for small water courses to terminate at one of these swallow-holes, and advantage has been taken of their presence to dispose of sewage, not only from single houses but from clusters of houses, and even from part of a village—as at Timsbury and Peasedown.

Sewage turned direct into a fissure is "got rid of"; but from the account I have given of the geology of this neighbourhood it will be seen that sewage disposed of in this way may be carried long distances underground without undergoing appreciable purification. The pollution of the underground water supply, brought about in this way, may have serious consequences.

When in the district I heard complaints of the quality of water supplied from the Downside supply at the extreme limit of the water supply. It was stated that the water as delivered was of a brown colour, and that a scum formed on the surface when it was boiled. The supply had only been in use for a short period, and it is possible that the "Angus Smith preparation" with which the interior of the pipes is coated may in some measure have accounted for this condition; if this be so, it will disappear in the course of time.

A recent chemical and bacteriological examination of this water made by the Public Analyst, Bristol, shows that the water is exceptionally free from organic pollution, and that no typical

* These swallow-holes are locally termed "slockers."

forms of *B. Coli Communis* were found in 50 c.c. He reports, however, that there is a considerable sediment consisting entirely of mineral débris.

There are 40 miles of water mains, and owing to the topographical distribution of the supply there is a very considerable number of dead ends.

On inquiry at Downside College I learnt that the total amount of water taken by the Clutton Rural District Council for the four weeks ending 12th November was 1,694,000 gallons—a daily average of 60,500 gallons; and for the four weeks ending December 10th, 1,567,000 gallons were taken—a daily average of 55,964 gallons. On two days in November, the 25th and 26th, the amount taken was as low as 33,000 and 30,000 gallons respectively.

Chew Magna.—In 1902 a complaint was received by the Board from some of the principal inhabitants of the village of Chew Magna respecting its water supply. The supply is derived from one public well and a number of private shallow wells. It was reported that the water of the public well and of many of the private wells was badly polluted; few samples of water analysed by the Medical Officer of Health could be considered sufficiently satisfactory to pass an ordinary chemical test; and the water of the public well when analysed by two public analysts was condemned in no uncertain terms. Considerable correspondence took place between the Board, the Rural District Council and Mr. Meade King, who represented the complainants; and negotiations were opened between the Council and the Bristol and the West Gloucestershire Water Companies. These negotiations reached no satisfactory conclusion, and in January, 1905, the correspondence ceased for a time.

There can be no doubt that a new source of water supply to the village of Chew Magna is a pressing need. The water of the public well, which is the sole public supply, is known to be seriously polluted; a notice is placed over this well to the effect that its water is impure and must be boiled before use.

Certain legal difficulties associated with laying on a water supply to this village from available sources have arisen, but they seem to be such as should be settled by mutual agreement, and a conference between all those interested in the subject appears to be indicated.

Throughout the district where a public water supply has been provided by the Rural District Council or by private enterprise the supply of water is almost entirely given from standpipes. It is the exception for water to be laid on to the interior of the houses. In many instances no drain has been provided to carry away the waste water from these standpipes.

Prior to the year 1904 no money was borrowed by the Clutton Rural District Council or their predecessors for works of public utility. Since that date loans amounting to £25,085 have been sanctioned by the Board for works of public water supply; and a further application for like purpose is now before the Local Government Board. Of the amount already sanctioned £22,357 has been taken up by the Council since June, 1907.

It is worthy of note that the County Council first began to communicate with the Rural District Council with regard to the matter of the water supply of the district in 1900, and in 1903 to press the Rural District Council to improve the water supply to parts of its district.

With the exception of Chew Magna, population (1901) 1,492, the most thickly populated part of the Rural District is now supplied with water. If the total population of the Rural District of Clutton be taken at the census figure of 16,599, there would now be only some 3,700 persons living in a sparsely-populated area who are not within reach of a public water supply, but the water which is available is in certain instances liable to possible pollution.

SEWERAGE, DRAINAGE, AND THE DISPOSAL OF EXCREMENT AND REFUSE.

The Rural District Council has not provided any complete sewerage system for any part of its district.

At Compton Martin and Ubley there is a fairly satisfactory system of sewers with very complete sewage disposal works. This scheme was carried out by the Bristol Waterworks Company to protect its water supply.

At Peasedown St. John the cottages of the Dunkerton Collieries Company have a slop sewerage system; the outfall sewer being taken to sewage disposal works situated in the Bath Rural District. The sewage disposal works, which consist of a septic tank and bacterial beds of coke breeze, were not acting satisfactorily on the day of my visit; when little difference was to be detected between the sewage as it entered the works and the effluent as it left them. This effluent, after leaving the disposal works, passes down a fissure in the geological strata, and is lost sight of. The works were constructed at the expense of, and are maintained by, the Collieries Company.

At some of the principal villages the old road culverts, stone rubble drains square in section, are used as sewers, *i.e.*, house drains have been connected to them. There are places where the Council have replaced short lengths of these old road drains by pipe sewers. As these old road culverts were originally meant for carrying off storm-water, they, for the most part, discharge to brooks and streams. This is the case at Paulton, where the discharge of crude sewage to the brook constitutes a serious nuisance: the brook is converted into practically an open sewer; it is so offensive that it has been covered over for a certain distance. At some of the larger villages the sewage is carried to covered cesspools or tanks, as at Timsbury, where the sewage from the southern portion of the village passes to a covered cesspool; but the chain-pump for emptying it is never used, and the sewerage overflows to find its way down a field to a stream which flows into the River Cam. The remainder of the sewage of this village is conducted to a spot at which there is a fissure in the ground, down which it passes to the possible danger of underground water supplies. Again, at High Littleton some of the sewage is discharged to a tank at the bottom of Rotcombe Lane; the overflow from this

tank apparently passes direct to the brook. In this village many houses are being built; and there are many cesspools, the overflow from which flows down fields to the nearest water-course. At Chew Magna the sewage, passing in opposite directions by old stone culvert drains, and by some pipe drains, discharges at two different points to water-courses. At Hobbs Wall the sewage is discharged on to level ground a few yards from the houses, where it settles in stinking pools. At Bloomfield (Black-Dog), a small cluster of houses, an open drain passes within a few feet of the front doors of some cottages, and this discharges to a pipe drain, which carries the sewage to a tank. From this tank the sewage finds its way to a quarry.

In the year 1879 the Clutton Rural Sanitary Authority obtained a Provisional Order, which was confirmed, to put in force the compulsory clauses of the Lands Clauses Consolidation Acts 1845, 1860 and 1869, to enable the Authority to purchase and take land for the disposal and utilization of the sewage of part of the parish of Timsbury. In the same year the Board granted sanction to the Clutton Rural Sanitary Authority to borrow £850 for works of sewerage and sewage disposal in Timsbury parish. This scheme included the part of the parish then known as "Black-Dog." The scheme was not carried out.

The house drains of the older houses—as to the condition and construction of which little is known—discharge to the old road culverts, or to sewers, cesspools, brooks, ditches, road gutters, or on to the fields, and in some cases to quarries. Some houses have no drainage. The sewage from the workhouse passes into settling tanks, where a certain amount of the solids are deposited, and the overflow from which is discharged direct to a stream.

The drains of new houses are examined *in situ* by the Inspector of Nuisances. Usually these drains are submitted to no more crucial test than mere inspection, and the discharge therein of a smoke rocket; though, I am informed, a smoke machine is occasionally borrowed from the surveyor of a neighbouring district! The water test is never used.

There are comparatively few water-closets in the district. Where these exist for the most part they discharge to cesspools; though a considerable number are connected to the old road culverts. There is a certain number of pail-closets, and the number is increasing. The greater part of the houses are provided with privies, which vary in construction; some are of the tank privy type, others are merely holes in the ground, and nearly all are objectionable allowing of fouling of the ground. The Rural District Council does not undertake the emptying of cesspools, pails, or privies, this duty is left to the householders; and the Council has drawn up no bye-laws to regulate such matters. In many cases there is ample garden space to the houses, but this is by no means always the case. There are houses even in the rural parts of this district which have little or no land on which excrement can be disposed of; at Hobbs Wall and Bloomfield, for instance, some of the houses have no gardens. There are instances in which one privy serves more than one household. Throughout the whole district one of the most striking characteristics is the absence of any receptacle for refuse and ashes; such

material is allowed to accumulate in heaps in the house-yard, garden, or by the roadside. There are a few fixed receptacles for refuse, and these are generally uncovered, so that the rain renders the contents sloppy; and there are a few movable receptacles, such as tubs or pails.

DWELLINGS AND THEIR SURROUNDINGS.

A considerable amount of building is going on in the district. I am informed that since the Census of 1901, 381 houses have been built in the district; of these 336 have been erected in the coal-mining parishes, and 45 in the rest of the district. Also, that many houses have fallen into disrepair and some have been pulled down; thus in Camerton parish 19 houses have been demolished.

The cottage property in general can be said to be in a fairly satisfactory condition, but this is far from being universal. The most defective conditions are, in the main, associated with old houses, with damp walls, with defective roofing and eavesputting, and with low and badly lighted rooms. Throughout the district the houses are damp; many are built of porous stone and are unprovided with damp-proof courses; many have floors constructed of stone slabs on the ground level or, as is frequently the case, below the level of the ground surface. Some of the dwellings of comparatively recent erection are damp, owing to inferior material having been used in their construction. Some houses now building are being erected without damp-proof courses in circumstances where such action appears to be needed, no attempt being made to shut out the moisture and ground air by covering the whole surface of the ground on which the houses stand by concrete-cement foundations.

The yards in connexion with cottage property are in many instances badly paved, or are not paved at all. The result of this is that the ground in the immediate neighbourhood of the house becomes dirty in wet weather; the refuse, which is almost always to be found near the house, gets trodden into the ground; and slop sewage stands in pools on the uneven surface. Conditions such as these tend to make cleanliness inside the dwelling difficult of attainment, and permit of liquid filth soaking into the foundation of the house.

The Medical Officer of Health for the rural district, in his annual reports, directs attention to the insufficient housing accommodation in the district. Although a considerable amount of building is now being carried on in the larger villages, nevertheless in these, as well as in the more rural parts, people were found occupying houses so insanitary and so dilapidated as to constitute "uninhabitable" houses. Such people live in these conditions because they cannot find more suitable houses to move to; and they are permitted so to live lest by their ejection overcrowding in other houses should be brought about.

It seems to be indicated that the present coal-mining operations of the district will be extended, and in such case the demand for housing accommodation for the working classes will be increased in the near future.

By the terms of the Housing, Town Planning, &c., Act 1909, Part III. of the Housing of the Working Classes Act 1890 is now automatically in operation in the rural district; and if the necessary house accommodation for miners working in the coal-pits is not forthcoming through private enterprise, the Rural District Council can undertake the duty of providing the required accommodation.

THE DAIRY INDUSTRY.

A list, furnished to me by the Inspector of Nuisances, shows that there are 360 registered cowkeepers in the district. Of these 204 are milk sellers; 149 only make butter or cheese; in the remaining seven instances no statement is appended. The district is noted for the production of Cheddar cheese; and it is the custom of many cowkeepers to make cheese in the summer months, and to sell milk only in the winter months, when a higher price can be obtained for it. Therefore, it is possible that the figures given above may vary at different times of the year. Also, in this part of the country it is the practice to keep the cows in the fields, except in very inclement weather, and only to bring them to the cowsheds at milking times; indeed, in many instances, the cowsheds are not used even to this extent: the cows being milked in the fields or in the farmyards.

Most of the cowsheds are substantially built, and many are well designed and constructed; a small proportion are dark and ill-ventilated. By a little attention from the officers of the sanitary authority, and by intelligent co-operation on the part of the farmers, the majority of the defective cowsheds could be put into and kept in decent sanitary condition. The main shortcomings observed were irregular, uneven and broken flooring, absence of drainage, or drains opening inside the cowshed, and dirt. Very little attempt appears to be made to clean the inside of the cowsheds; several were filthy in the extreme. The surroundings of the cowsheds leave much to be desired, and some could only be entered after wading through sloppy manure several inches deep. Also, it seems a common practice to throw out the dung through the windows of the cowsheds, and to leave it in heaps against their walls. In one or two instances swine along with the milch cows are kept in the cowsheds; and undrained and stinking pigsties abut on certain other cowsheds.

Several of the large milk firms who obtain milk from this district, either before or soon after entering into their contract with the farmer, require a report from the Medical Officer of Health on the sanitary condition of the cowsheds and their surroundings. One large London firm does not rest content with this preliminary report; but requires from time to time a further report on the premises, and samples of the water used on the farm to be submitted to it for chemical and bacteriological examination. If the report of the analyst is not satisfactory, it is submitted to the Medical Officer of Health, with a request that he will re-visit the farm, make special inquiry, and furnish the firm with a report and explanation of the matter, so that it can determine whether to continue its contract for milk

supply from the farm in question. Speaking generally, I found during my inspection that the farms which supply this firm with milk were in a better sanitary condition than other farms. Also, at these farms some care has been taken to safeguard the water supply used in the dairies, and where a public supply is available it has in many instances been laid on to the farms. Nevertheless, there are in the district farms, from which milk is sold, where the water used for washing the milk utensils is derived from sources liable to pollution.

Regulations for dairies, cowsheds and milkshops have been drawn up by the Rural District Council, and came into force on 1st July 1909; but at my inspection in November and December of that year it did not appear to me that any systematic attempt had been made to enforce these regulations. This is the more surprising when the importance of the milk farming and cheese and butter-making industry of the district is taken into consideration.

SLAUGHTER HOUSES.

A list of 22 slaughter houses was supplied to me; but during my inspection of the district I found additional slaughter houses which were in regular use. In almost all of those visited the lairs open directly into the slaughter house and indeed form part of the same interior. The drainage arrangements are not always satisfactory. The paving of the slaughter house itself is in some instances defective, while that of the slaughter-house yard is commonly so.

Instances were observed where collections of manure and refuse heaps, containing material from the slaughter house, were piled against or in close proximity to the walls of the slaughter house. The conditions associated with one slaughter house at Carlingcott are filthy in the extreme. It would seem a fairly common practice at some farms for the farmers to slaughter pigs and sheep at their farms, often amid filthy surroundings, and to take the carcasses into the markets for sale.

It is not unusual to find sausage-making being carried on and pork kept in pickling tubs in, the actual slaughter house.

BAKEHOUSES.

The list supplied to me shows that there are 28 bakehouses in the district. These, for the most part, are in good condition. In some, however, mainly owing to the defective character of the paving, the floor of the bakehouse is dirty.

SANITARY ADMINISTRATION.

The Rural District Council of Clutton consists of thirty-one members who meet fortnightly. It has no Sanitary Committee, and matters concerning the public health are dealt with by the Council as a whole.

Adoptive Acts, Bye-laws, and Regulations.—The Infectious Disease (Prevention) Act 1890, and the Public Health Acts

(Amendment) Act 1890, Part III., were adopted by the Council, and came into operation in the district in April 1891.

Voluntary notification of tuberculosis was adopted in April 1909.

Bye-laws.—The following bye-laws and regulations are in force in the district:—

<i>Description.</i>	<i>Allowed by the Local Government Board.</i>
*Common lodging houses ...	24th November, 1879
†Slaughter houses (for certain parishes)	18th May, 1885
Houses let in lodgings or occupied by members of more than one family (for the parish of Paulton)	21st December, 1887

Regulations.—Dairies, cowsheds, and milkshops ... 30th April, 1909.

By an Order of the Board dated 28th February 1876, powers under Section 44 (Scavenging) and urban powers under Sections 157 and 158 (New Buildings) of the Public Health Act 1875, were granted to the Sanitary Authority for eight parishes. By an Order of the Board dated 14th May 1884, the Sanitary Authority received powers under Sections 169 (paragraphs 2 and 3) and 170 (Slaughter Houses) of the Public Health Act, 1875, for ten parishes. By a further Order of the Board dated 25th September 1893, powers under Section 44 (Scavenging) of the Public Health Act 1875, were granted for the parishes not included in the Order of 1876.

That considerable local doubt has existed with regard to these matters is evidenced by the fact that in June 1899 the Board received a letter from the Clerk of the Rural District Council stating that a copy of the Board's Order of 1876 had been found pasted in an old minute book, and requesting the Board to inform the Council what bye-laws were in operation in the district. The required information was given by the Board; and the Council in November 1899 asked the Board to furnish it with draft forms of the Board's model bye-laws. The request was complied with. No further correspondence on this matter took place until in January 1902, the Rural District Council again applied to the Board for a copy of the new model bye-laws for rural districts, and in July 1903, it submitted for the Board's approval a series of bye-laws for "New Buildings" and certain matters in connection with buildings. The Board suggested a few minor alterations which the Council accepted in January 1904. In October of that year the Clerk wrote to the Board stating that the proposal to adopt the bye-laws had been rejected by the Council.

There the matter rested until the month of February, 1909, when the Clerk again wrote to the Board for copies of the model

* At the present time there are no common lodging houses in the district.

† The bye-laws regulating slaughter houses only apply to ten parishes of the rural district. There would be advantage in revising these bye-laws, and in making them applicable to the whole of the district.

bye-laws, and in July forwarded a copy of the bye-laws which the Council proposed to adopt. After some correspondence with regard to certain details, the Board confirmed the bye-laws on the 5th April, 1910.

SANITARY STAFF.

The Sanitary Staff of the Clutton Rural District Council consists of a Medical Officer of Health and one Inspector of Nuisances. The other salaried officers are, in addition to the Clerk of the Council, a Surveyor of Highways, salary £255 per annum; and a Collector of Water Rates, who is paid a salary of £120 per annum, and in addition to the collection of water rates he has charge of the water mains, fittings, &c., over the "eight parishes" supply.

The Medical Officer of Health.—Mr. Richard Hugh Brew, L.R.C.P., L.R.C.S., L.M., Edin., was appointed as Medical Officer of Health in 1901 at a salary of £100 per annum. Of this sum a moiety is repaid by the County Council. Mr. Brew also holds the office of Public Vaccinator and District Medical Officer for the Chew Magna district of the Clutton Union. In addition he is Medical Officer to the Post Office, Board of Education, Factory Surgeon, and is engaged in private practice. At the time of his appointment he had no special training in or knowledge of public health duties; but during his period of office he has made diligent study of these duties, and he has acquired a very complete knowledge of his district. He makes an annual and a fortnightly report to his Council. He has not been required to attend the fortnightly meetings of the Council, and he has not always been consulted by the Council on sanitary matters concerning which it would have been of advantage to have had his professional advice.

It seems that the Council considered, as the Medical Officer of Health is only a part-time officer, his personal attendance should not be required at each Council meeting. During the year 1909, however, his advice was sought on the building bye-laws, the complaint of the County Council, and the voluntary notification of tuberculosis. Mr. Brew informs me that he feels the disadvantage of not being acquainted with the matters of sanitary administration dealt with by the Council, and that he is quite willing to attend the Council meetings when sanitary matters are under discussion. It is to be hoped that the past misunderstanding on this point will now be rectified.

The Inspector of Nuisances.—Mr. Walter Herbert Whittaker, who holds the Certificate of the Sanitary Institute and the South Kensington Building Construction Certificate, was appointed Inspector of Nuisances in February 1904. He receives a salary of £104 a year, half of which is repaid by the County Council. When Mr. Whittaker was first appointed he received £100 per annum and the Council supplied him with a bicycle; but in 1907 his salary was increased by £4 and he was "required to furnish his own means of locomotion."

Mr. Whittaker makes an annual report on his work, and attends the fortnightly meetings of the Council when he makes a verbal or a written report. He keeps the registers of factories and workshops, outworkers, cowsheds and dairies, slaughter houses; a journal; the records of zymotic diseases, and water samples; and various other books appertaining to his office. He disinfects houses which have been invaded by infectious diseases, and deals with nuisances. He has made a house-to-house inspection of a great part of his district. He does not work under the direction of the Medical Officer of Health, and these officers rarely see each other. Although Mr. Whittaker appears to possess a great capacity for work, and it is clear that he has done a great deal since his appointment, yet he seems to have been engaged in a constant and ineffectual struggle to keep his work up to date. The work done has been such as to leave but little impression on the district: abateable nuisances exist in every part of it. On my pointing out obvious nuisances to him his usual reply was that he had told the people to abate the nuisance, and they had not done so. So far as I could gather, statutory proceedings have only been taken during the last few years in one instance:—To obtain the right to take a sample of water for analysis.

The Inspector of Nuisances resides at Paulton. Though Paulton is the most thickly-populated place in the district it is 8 miles from the residence of the Medical Officer of Health; and while the latter officer's residence is, that of the Inspector of Nuisances is not, connected with the telephone service.

It is quite clear that the present arrangement does not work well. Moreover, even with the Inspector of Nuisances working under the direct superintendence of the Medical Officer of Health, I have formed the opinion that there is ample scope for the services of more than one Inspector of Nuisances in the Clutton Rural District.

METHOD OF DEALING WITH NOTIFIABLE INFECTIOUS DISEASES.

The Rural District Council have no isolation hospital and no disinfecting apparatus.

On receipt of a notification of a case of infectious disease the Medical Officer of Health sends the notice to the inspector of nuisances, who visits the invaded house. The latter officer leaves a sheet of printed instructions for the guidance of the householder, and a stamped and directed postcard to be sent to the Medical Officer of Health by the medical practitioner in attendance on the case at the termination of the illness, and when the house is ready for disinfection. If required, disinfectants are supplied by the Rural District Council, and on application to the Medical Officer of Health, medical practitioners are supplied gratuitously with diphtheria anti-toxin, and "swabs" from throat or nose are sent for bacteriological examination at the expense of the Council. During the course of the illness the Medical Officer of Health visits the house at least once and the inspector of nuisances pays several visits. Infected rooms are

treated by burning candles of sulphur in them, but sometimes formalin or a formalin spray is used. Unless the occupier voluntarily does it, paper is not stripped from the walls. It is said that in a case of small-pox the walls would be stripped of paper. Infected clothes are washed when it is possible to get the householder to undertake the work. Bedding is subjected to a formalin spray; and then, if there is any garden space, it is exposed to the air.

If a case of infectious disease occurs at a house from which children are attending school, notice is given to the head teacher, and the children are not allowed to return to the school until they take a printed certificate as to freedom from infectious disease from the Medical Officer of Health.

Dr. Savage, the newly appointed Medical Officer of Health to the County Council of Somersetshire, has recently met in conference the medical officers of health of the sanitary districts in the county with a view to bringing about a uniform procedure throughout the county for dealing with the exclusion of scholars from school, and for school closure in cases of infectious disease. The result should prove eminently satisfactory.

THE MIDWIVES ACT 1902.

The County Council of Somersetshire has appointed a lady inspector of midwives, and the present holder of the office—Miss Dusantoy—succeeded to the appointment in December 1906.

The County Council pay for the training of six midwives, and has always six midwives passing through the course of training.

Mr. Brew has pointed out in his annual report for the year 1908 that many uncertified women still practise their calling in the Clutton Rural District.

THE ECCLESIASTICAL PARISH OF PEASEDOWN ST. JOHN.

As already stated this ecclesiastical parish is partly in the Clutton and partly in the Bath Rural District. Here there is no comprehensive system of sewers, and part of the sewage finds its way by old road culverts and pipe sewers to discharge into a ditch. An efficient system of sewerage and of sewage disposal should be provided. House drainage is defective, yards are unpaved, no provision is made for ashes, many privies stand near houses, sewage from open cesspits leaks into the soil, the arrangements for the disposal of rain water are often faulty, no provision is made for the disposal of waste water from public standpipes. The worst of the old house property in the Clutton Rural District is to be found in Peasedown St. John. The same class of house property exists in that part of Peasedown St. John which is in the Bath Rural District; but owing to building byelaws being in operation in the Bath Rural District the new property in it is superior to that in the Clutton Rural District.

A public water supply has been provided as already described.

The whole of this neighbourhood requires a proper system of sewers and should be regularly scavenged by the sanitary authority.

In the Clutton portion of Peasedown St. John, and on its

boundary, the Dunkerton Collieries Company have erected 100 cottages. This Company opened two new coal pits in 1906; and finding there was a great scarcity of houses in the neighbourhood, applied to the Public Works Loan Board for financial assistance. The Public Works Loan Board agreed to grant a loan to the Company on completion of the buildings, repayable in twenty years of half the estimated cost (£15,000) of the undertaking, and they advanced the amount of £7,500 in June, 1909.

It is the function of the Public Works Loan Board in transactions of this nature to satisfy themselves that the security on which they advance money is ample. When new buildings are concerned, the plans and specifications are submitted by the Public Works Loan Board to His Majesty's Office of Works for approval. His Majesty's Office of Works are mainly concerned to see that certain regulations, drawn up by His Majesty's Treasury, are carried out. The regulations contain clauses which on the one hand deal in general terms with the lighting, ventilation, and general construction of the buildings; and are so framed as not to interfere with the operation of local byelaws, but they require sufficient water closet accommodation to be provided for each house, and a sufficient water supply; so that the houses, as houses, are fit for human habitation; and, on the other hand, they provide for the houses to be kept clean and in tenantable repair during the period until the loan shall have been paid off. The regulations are confined to the actual dwelling, and do not deal with the construction of house drainage, or the disposal thereof, road making, and matters of like kind, which, presumably, it should be the duty of the local sanitary authority to regulate.

In the first instance the Company planned their scheme to provide a water closet for, and to lay on a water supply to, each cottage. When 25 of the cottages were almost completed, and the remainder were being built, the Company were informed that the Peasedown Joint Committee for Water Supply declined to provide a supply other than by standpipes. The Company, with the knowledge of the Public Works Loan Board and the conditional consent of H.M. Office of Works, then changed the system of excrement disposal by water closets to one of pail closets. The pail closets are scavenged by the Collieries Company under a contract. When these cottages were first occupied, the Company had difficulty in disposing of the liquid filth, but they now have sewage-disposal works (*see* page 11). The drainage system of these cottages is ventilated by shafts which are carried up above the eaves of the houses; and each cottage has a trapped gully in the yard for the disposal of slop water. This gully is placed directly under the rain-water pipe from the roof of the cottage. If this rain-water pipe had been carried down to the ground level there would be no objection to this arrangement, but owing to the lack of an abundant water supply, these pipes have been arranged to terminate several feet from the ground to permit of a water butt being placed under them. The result has been that the water butt has been placed on the gully, and the slop water has been thrown on the unpaved

surface of the yard. The representatives of the Collieries Company accepted my suggestion to have the water butts removed to the side of the gully, and the rain-water pipe fitted with a "knee joint" so that the pipe may discharge to the water butt. Each two cottages have a yard in common; and at the time of my visit these yards were unpaved. Several of the occupiers had made a rough paving of bricks, but as the bricks are porous and have not been set in mortar or cement, the result has not been satisfactory. Although such paving has doubtless prevented mud and dirt being carried into the interior of the cottages, it has not prevented water soaking into the foundations and footings of the cottages. As the cottages are built in rows on a steep hill side, roughly parallel with the contour lines, surface water, flowing down the hill, has found access to the interior of the cottages, the floors of which are in most instances on a level with the yard surfaces. Rain-water down pipes are provided to the front of the cottages, but these discharge upon the ground. No drains or channels have been provided to carry the rain water away from the houses. Since my visit I have learned from one of the Directors that the Company has had one or two of these yards cemented to a depth of four or five inches, and so arranged that all the water falling on the surface of the yards shall drain to the two yard gullies, and that the remainder of the houses shall be dealt with in similar fashion; while the roads at the back of the cottages have been reconstructed in such a way that no flood water can enter the yards. The cost of this work will be considerable, but the Company has assured me that it will be carried out. It is part of the Company's agreement with the Public Works Loan Board to supply sufficient ashbins; and the Company contend that it is the duty of the Inspector of Nuisances to see that the refuse is properly disposed of by the occupiers of the houses, who have ample garden space for this purpose.

I have described this colliery property somewhat fully on account of the strong local feeling which has existed with regard to it; this, in my opinion, is quite out of proportion to the importance of the case. It has been alleged that the pail closets are too near to the dwelling houses. As the Collieries Company planned these conveniences as water closets, and owing to the fact that it was unable to get water laid on to each house, it had to substitute pail closets; it declined to incur any expense in altering the position of the closets or to re-convert these pail closets to water closets. With this exception, I found the Company ready to consider and carry out suggestions for the sanitary improvement of its property. Possibly, at some future time, water will be laid on to each cottage by the Collieries Company, as it forms part of the agreement between the Public Works Loan Board and the Collieries Company that each house shall be supplied with water when the necessary supply is available.

Up to the month of June in last year the Collieries Company had, so I am informed, expended the sum of £20,196 on these cottages. The cottages contain two living and three bed rooms

and outhouses, and they are superior to the average cottages in the locality.

CONCLUSION.

In the past the Board has had cause to complain of the dilatoriness and procrastination of the sanitary authority of this district, and it will have been seen from this report that public health work of a comprehensive character has only been undertaken by the Clutton Rural District Council during the last few years. The present Council have to deal with the legacy of laxity left to them by their predecessors in office.

I have seen much of the correspondence which has passed between the County Council and the Rural District Council, and this leaves me with the impression that the Rural District Council have hitherto been inclined to resent the County Council exercising their functions as a supervising authority with regard to the administration of public health matters in the rural district. I am of opinion that had the Rural District Council taken the County Council more into its confidence a better understanding would have existed between the two Councils than has apparently been the case.

I wish to express my thanks to the officers of the County Council, and of the Rural Councils of Clutton, Bath, and Shepton Mallet; to Rev. F. P. Whiteside, Engineer to the Downside College Water Undertaking; to Rev. John H. C. Morson, Vicar of Peasedown St. John; to Mr. Egbert Spear, Director of the Dunkerton Collieries Company; and to many other persons who kindly gave me information and assistance during my inquiry.

RECOMMENDATIONS.

1. The Rural District Council should take steps with a view to securing the protection of such of the water supplies of their district as are exposed to risk of dangerous pollution against contamination of this sort. They should communicate with the Shepton Mallet Rural District Council with a view to action being taken to protect the Gurney Slade supply from pollution.

2. The Rural District Council should seek the advice of a competent engineer with a view to the provision of efficient means of sewerage and of sewage disposal for the villages of Paulton, High Littleton, Timsbury, Chew Magna and Hobbs Wall.

3. The provision of proper receptacles for house refuse should be insisted on throughout the district.

4. The Rural District Council should undertake the public scavenging in the villages of Paulton, Timsbury, High Littleton and Chew Magna; and for the remainder of the rural district should make byelaws imposing upon occupiers the duty of removing house refuse from their premises.

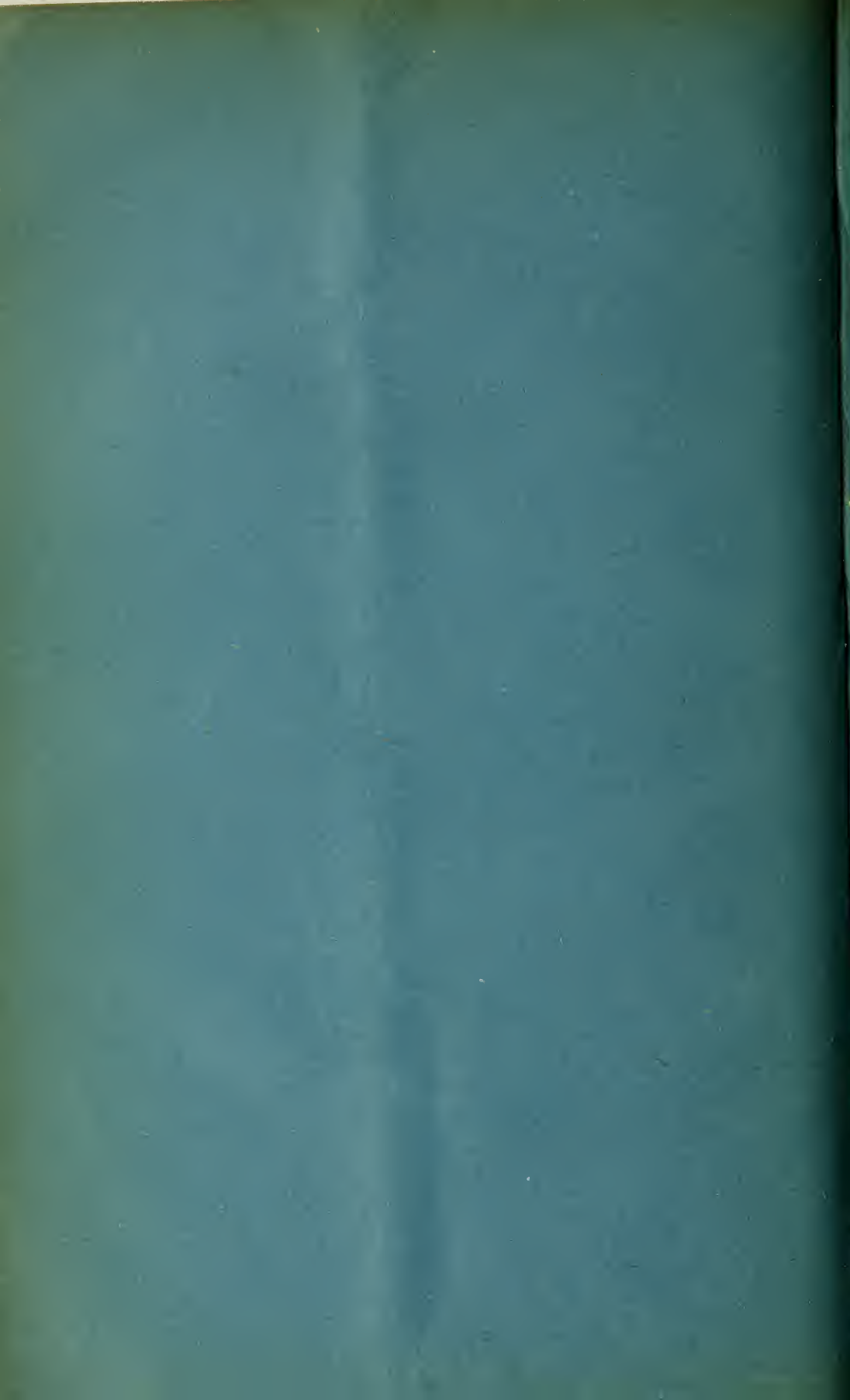
5. The provisions of the Public Health Act 1875 for the repression of nuisances should be systematically enforced. Nuisances likely to recur should be specially dealt with under Section 95 of the above-mentioned Act.

The Council should have before them at each meeting a statement of nuisances which have not been complied with; statutory notices should be served in respect of these nuisances and followed up when necessary by legal proceedings to enforce compliance. The periodical reports of the Medical Officer of Health should comprise a statement of the number of sanitary notices served during the period under report; and of the result of action taken. A complete and detailed summary of these facts should appear in each annual report of the Medical Officer of Health.

6. Suitable isolation hospital accommodation should be provided; preferably in conjunction with neighbouring sanitary authorities.

7. An additional inspector of nuisances should be appointed; he should be required to devote his whole time to the duties of his office.

RICHARD J. REECE.



38
FOR OFFICIAL USE.

REPORTS

TO THE

LOCAL GOVERNMENT BOARD

ON

PUBLIC HEALTH AND MEDICAL SUBJECTS.

(NEW SERIES, No. 23.)

Dr. J. Spencer Low's Report to the Local
Government Board on the Sanitary Cir-
cumstances and Administration of the
Bedwellty Urban District.

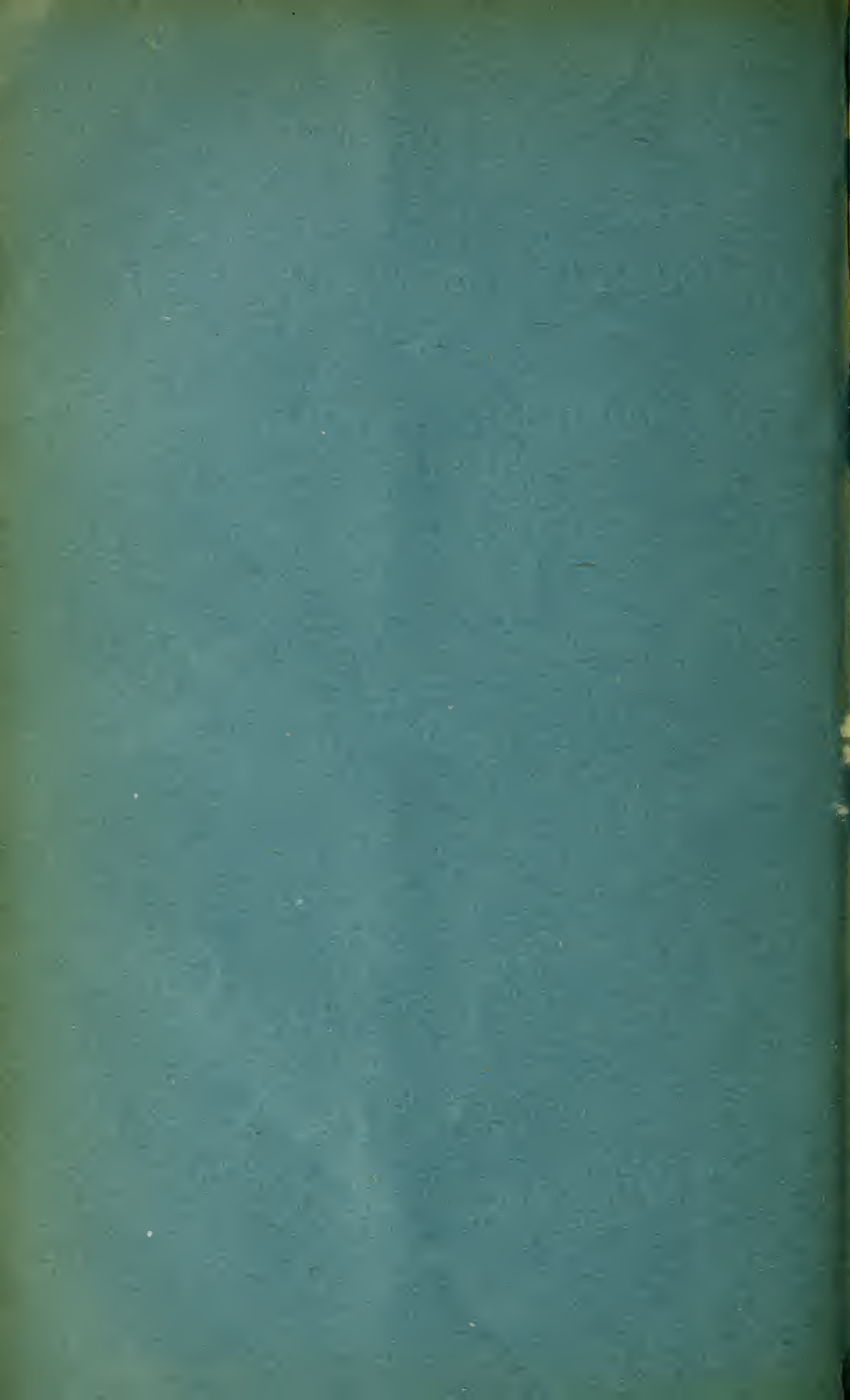


LONDON :
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C. ; or
OLIVER AND BOYD, TWEEDDALE COURT, EDINBURGH ; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1910.

Price Threepence.



39

Dr. J. Spencer Low's Report to the Local Government Board on the Sanitary Circumstances and Administration of the Bedwellty Urban District.

ARTHUR NEWSHOLME,

Medical Officer,

9th February, 1910.

The Bedwellty Urban District, with an area of 7,267 acres, occupies portions of the parallel valleys of the Rhymney and Sirhowy rivers, which run almost directly north and south. To the north of this area lie the Rhymney and Tredegar Urban Districts; to the south the Mynyddislwyn Urban District; to the west the river Rhymney and the Gelligaer Urban District in the county of Glamorgan; to the east the Sirhowy river and the Ebbw Vale, Abercarn, and Mynyddislwyn Urban Districts.

The district consists of chains of colliery villages in two valleys, with scattered farms and other houses on the hills. The bulk of the population is engaged in coal mining; an iron foundry and quarrying occupy 100 to 200 men; the remaining population is engaged in agricultural pursuits.

The width of the district varies from $1\frac{1}{2}$ to nearly 3 miles; it is between 6 and 7 miles in length.

Geologically the soil consists of sand and gravel overlying Boulder Clay containing fragments of Old Red Sandstone; beneath this is Pennant Rock and the Lower Coal Measures of the South Wales coalfield.

The census population in 1891, 6,743, had increased to 9,988 in 1901; in 1909 it is estimated at 18,759. The number of inhabited houses at these three dates was 1,265, 1,900 and 3,751 respectively. In April, 1909, the books of the collector of rates showed that 3,726 houses were inhabited. On the present estimated population and number of houses the number of persons per inhabited house is 5; at the last census it was 5·5, when that for England and Wales (urban districts) was 5·4.

LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.

And to be purchased, either directly or through any Bookseller, from
WYMAN AND SONS, LTD., FETTER LANE, E.C.; or
OLIVER & BOYD, TWEEDDALE COURT, EDINBURGH; or
E. PONSONBY, 116, GRAFTON STREET, DUBLIN.

1910.

No. 23.

Price Threepence.

(14827—21.) Wt. 23433—145. 500. 2/10. D & S.

A

The rateable and assessable values are £74,790 and £68,612 respectively.

The balance of outstanding loans for sanitary purposes is £8,476.

A penny rate produces nearly £286. The poor rate has increased from 3s. 8d. in the £ in 1907 to 5s. 8d. in 1909. In the same period the general district rate increased from 3s. to 3s. 6d. in the £. The length of county roads, which are in a satisfactory state, is 3½ miles; that of secondary roads is 38 miles. Some of the private streets have not yet been made up.

SANITARY CIRCUMSTANCES.

Housing.—Since 1901, when the number of houses was 1,900, 1,819 others have been built, so that nearly one-half of the present houses in the district are of recent construction. The number of houses erected in the several wards of the district, between June 30th, 1903, and June 30th, 1909, is as follows:—

Year ending	New Tredegar.	Cwmsy-fog.	Aber-bargoed.	Pengam.	Argoed.	Black-wood.	Total.
June 30th, 1904	4	57	104	72	11	38	286
" " 1905	13	7	169	66	10	47	312
" " 1906	12	30	124	84	—	61	311
" " 1907	60	10	52	65	8	32	227
" " 1908	173	2	20	5	11	11	222
" " 1909	—	6	8	4	4	44	66
Since built or under construction (October, 1909).	1	2	18	29	10	124	184

The newer houses are usually constructed of stone with slate roofs; they contain three rooms upstairs and three downstairs; some, though not a large proportion, are fitted with baths. They are rented as highly as 25s. to 30s. a month, with the result that from motives of economy more than one family frequently occupy the same house. The older houses usually contain two rooms downstairs and two upstairs. They are commonly built of stone, and are rented at 16s. to 20s. a month.

There is a lack of small tenements for newly married persons, who in consequence share larger houses with other families. Even at the present time there is hardly a sufficiency of housing accommodation in the district, and to this, in part at least, is due the not infrequent occurrence of overcrowding in individual houses. This evil is likely to become intensified in the near future, when the large new Oakdale collieries, now being sunk near Blackwood, are opened, unless a large increase is made in the number of houses in that neighbourhood.

Some houses are back-to-back, back-to-earth, or cellar dwellings; others are old and dilapidated. In some instances where the leases of old premises have some 15 years to run, the lessees are

said to be willing to rebuild the property if the old leases could be surrendered and new leases granted, but it has not been found possible to obtain them. One or two areas were indicated to me where substantial improvements might be effected by these means; and should the district council find on inquiry that the lessees or others are still willing to rebuild, improvement in housing might be made if the lessors were approached and the urgency of the case represented to them. As matters stand at present the district council have a choice of evils, either to allow persons to occupy houses unfit for habitation or, on the other hand, to close premises with the effect of leading to increase of overcrowding. The proper course, undoubtedly, is to close insanitary dwellings, taking the action advised in the 9th recommendation at the end of this report.

In former years Upper and Lower Roads, Cwmsyflog, contained a number of back-to-earth cellar dwellings. A number of these have been greatly improved; through ventilation has been secured by the provision of back doors, and the back areas have been deepened below the adjacent floor level.

Some of the cellar dwellings in Upper Road, however, are still unfit for habitation: they contain a living room and two bedrooms, one of the latter being constantly in total darkness, and without proper ventilation; these cellars are very damp. They might, with advantage, be converted to form basement kitchens or washhouses for the houses over them, as has been done in similar property at River Row, Tredegar. The old "Queen's," a disused public-house in this neighbourhood, is in a very dirty and rat-infested condition; it is quite unfit for human habitation.

In a number of instances persons occupying houses substantially built and otherwise sanitary, do not keep them in a cleanly state. Full reference is made to this matter in a report by Dr. Rocyn-Jones, county medical officer, submitted to the Monmouthshire County Council in January, 1909. In regard to some premises he reports that what fault there is to find is due, not to the owners but to the slovenly habits of the tenants. Dr. Jones lays stress also, as a result of his inspection, upon the great prevalence of overcrowding in the district.

Water Supply.—The waterworks of the Tredegar Urban District Council directly or indirectly supply much of the Bedwellty district. Hollybush is supplied directly from Tredegar; the Bedwellty Urban District Council purchase water in bulk from Tredegar to supply part of their district themselves; Tredegar water also is sold by the council to the New Tredegar and to the Rhymney and Aber gas and water companies to augment their supplies in the Bedwellty district.

The county medical officer has recently reported the presence of *bacillus coli communis* in $\frac{1}{10}$ cc. and *bacillus enteritidis sporogenes* in 1 cc. in the water supplied to Tredegar from Shon Sheffrey's spring, which is the only water sold by Tredegar to supply the Bedwellty area. I am informed that sewerage operations are to be conducted at Trefil, which is above the spring, and that other precautions are to be taken to cut off possible

sources of pollution; the water also is to be passed through Candy's filters.

At the time of my visit the Bedwellty district was receiving only a 12 hours supply per day from Tredegar, and much inconvenience was being experienced in the higher parts of the district, as water completely failed to reach the upper levels. The cause of this shortage appears to have been the failure of the Georgetown supply, one of the Tredegar sources, owing to the low rainfall—the least since 1896—in consequence of which, water from the Shon Sheffrey's spring had to be diverted to supply the Georgetown waterworks during part of the 24 hours. A contributory cause of shortage of water is the insufficient diameter of some of the water mains in the Bedwellty district: in one instance a 3-inch pipe is supposed to supply over 1,000 houses.

It will be seen, therefore, that the public water supply to some parts of the district is insufficient in quantity, while the particulars given above suggest that the supply as a whole is of doubtful quality.

The private supplies in the district are also, in some instances, apt to be deficient in amount, while their quality is not always above suspicion.

A number of the wells and springs, upon which the farmers and others depend for water, had failed on the hills at the time of my visit in September.

The village of Manmoel, supplied by spring water piped to a tank, also was without its proper supply, as the spring had failed; the inhabitants had been forced to resort to a spring elsewhere for their water. The Manmoel tank receives water at ordinary times from a spring exposed to risk of pollution.

That part of the New Tredegar ward known as Phillipstown, in addition to receiving the public water supply, has an auxiliary supply from a streamlet to which cattle have access and the water of which is peaty and chalybeate.

Sewerage.—The rivers Rhymney and Sirhowy are extensively polluted, the sewage of almost the whole district entering them in a crude state. When the trunk sewer of the Western Valleys (Mon.) Sewerage Board, now being laid, is in operation, river pollution in the Sirhowy valley will be prevented, but at present there is no scheme for the Rhymney valley. The Gelligaer Urban District Council are considering the provision of a sewer down the valley to sewage works beyond the lower border of their district near Ystrad Mynach. The Bedwellty Council have not decided whether they should connect the sewerage system of their district with this proposed sewer or lay down one of their own to serve their side of the valley and to connect with the Western Valleys sewer by tunnelling through the mountain. The Bedwellty Council sought the Board's sanction in 1906 to a loan for £35,000 for works of sewerage and sewage disposal in both valleys, but the Board advised the council to join the Western Valleys trunk scheme for the Sirhowy valley portion of their district (which has been done) and to arrange with the Gelligaer Council for a joint trunk sewer for the Rhymney valley. At the time of my visit crude

sewage or insufficiently purified effluents were being turned into the river Rhymney from the sewage works, which consist of bacterial beds, at Abertysswg (Rhymney Urban District), New Tredegar (Bedwellty Urban District), Tir Phil, Brithdir, and Gilfach (Gelligaer Urban District), all of which beds were being overworked or were otherwise in a state of inefficiency. Arrangements exist at all these sewage works which enable the whole of the dry weather flow of sewage to be passed into the river without treatment; at one of these works I was informed by the man in charge that this was his common practice at night time.

Most of the Bedwellty district is sewered, and extensions have been carried out with a view to connection with trunk sewers to be laid in the future in the Sirhowy and the Rhymney valleys. Stone drains still exist, as at New Tredegar and Blackwood. Some of the existing sewers are badly laid, but these are either in course of being properly relaid or will be properly relaid when the trunk sewers come into operation.

Sewers are ventilated as a rule only through the house drains, which are not disconnected from the sewers by intercepting traps. There are no special means of flushing the sewers except at New Tredegar, where automatic flushing tanks have been provided.

House Drainage.—Most of the district is provided with slop drains, properly trapped and commonly well ventilated. A number of dip traps were seen which should be replaced by proper stone-ware self-cleansing gully traps as opportunity offers. The drains of certain houses in Island Terrace, Argoed, frequently get out of order; they have been patched up from time to time, but stand in need of complete reconstruction.

Excrement Disposal and Removal.—The privy cesspit system prevails at Manmoel, Argoed, and the older parts of Blackwood, Pengam, Fleur-de-Lis, Aberbargoed, and Argoed. At Hollybush, and at some of the places already mentioned, there are also pail-closets. When these are emptied their contents are, as a rule, merely scooped out and the foul tubs are replaced; as a consequence these pail-closets are very offensive. The council do not undertake the removal of pail or privy contents except at Hollybush, and they have made byelaws regulating their removal by the occupiers in certain areas in the district. However, the householder postpones the distasteful task of emptying his privy or pail-closet as long as possible. The contents are buried in the gardens or elsewhere.

Most parts of New Tredegar, Cwmsyfiog, and Aberbargoed have water-closets, and the houses erected since 1901 in other parts of the district are similarly provided. Some water-closets, usually in localities at a distance from sewers, drain to cesspools. In certain instances, as at Lower Road, Cwmsyfiog, these cesspools, which are not watertight, are on ground sloping towards the houses, and should be at once abolished, especially as the sewer is within convenient distance. The schools at Elliotstown drain to cesspools, one of which constantly overflows on the side of a railway line, and gives rise to complaints.

The bulk of the water-closets in the district are handflushed; where flushing cisterns have been provided, but have got out of order, they are not always repaired. There was, as has been said, a shortage of water at the time of my visit, but if this is the reason for the omission to provide flushing cisterns it is a matter which should be remedied without delay. Many of the water-closets were in a most offensive condition, and the pans were thickly coated with filth, or blocked. The stench in the interior of many of these tub, privy, and hand-flushed closets was overpowering.

Disposal and Removal of House Refuse.—The council's workmen remove house refuse daily from parts of New Tredegar, Elliotstown, and Daviestown. They deliver it at the Powell Duffryn Company's rubbish bunker, and it is disposed of on the colliery waste tip at a cost of 6d. a load. From 200 to 240 loads are dumped here monthly; in 1907 £63, and in 1908 £57 10s. were paid to the company for the use of their tip. In other parts of New Tredegar the council's workmen remove refuse daily to tips in fields. Elsewhere refuse is removed by contractors: at Aberbargoed and Blackwood daily, at Pengam and Fleur-de-Lis four times a week, at Argoed three times a week, and at Hollybush once weekly, and tipped. Removal of refuse appears to be effected with fair regularity. The contractors at Fairview and Edward Street, Pengam, and at Pwllglas, however, have recently been in default.

There is a refuse tip at Jubilee Road, which is in close proximity to houses. Most of the other tips are fairly well removed from dwellings.

There are 4 common lodging-houses, 4 slaughter-houses, and 21 bakehouses in the district, all of which are registered; the occupiers of 38 cowsheds and 7 milkshops are registered.

Considerable attention has recently been devoted to the common lodging-houses, with good result; two other premises are to be registered when various improvements have been effected. Most of the premises are old, but they are fairly well kept, and in more than one instance it is proposed to rebuild them. There is much demand for lodging accommodation, on account of pit sinking and of laying the Sirhowy valley trunk sewer. There is a tendency to place extra beds in some of the rooms, a practice noticed in almost every one of the houses visited. Where double beds are provided they are permitted to be occupied by more than one male over the age of ten years, in contravention of the byelaws. Proceedings should be taken if these practices are persisted in.

I visited the farms of 15 of the registered cow-keepers, and found considerable evidence of recent improvement in lighting, ventilation, flooring, channelling, and draining. Most of the premises, however, are old, and the roofs are very low. Some of the sheds were in a state of filth, and were in much need of being whitewashed internally. In some instances, particularly upon a large estate in the district, no attention had been paid to notices calling for structural alterations served three months before my visit.

The milkshops seem to be well kept.

All the slaughter-houses were visited. An old place at Blackwood used for killing pigs and sheep is in a dilapidated and filthy state; the occupier has previously been summoned and fined for a pig-keeping nuisance and ordered to abate it. The styes are now in a bad condition, and the occupier has not complied with the order which was made.

All the bakehouses seen were well kept. A few have one or more walls against several feet of earth.

SANITARY ADMINISTRATION.

The Bedwellty Urban District Council consists of 15 members, most of whom are miners or are concerned in colliery management. The council meets monthly, with special meetings as required. There is no Sanitary Committee. Meetings are attended by the medical officer of health, who submits a verbal report monthly and written quarterly reports; the inspector of nuisances attends and submits his report monthly.

The following Acts have been adopted:—

Infectious Disease Prevention Act, 1890—February 27th, 1894.

Public Health Acts Amendment Act, 1890, Part 3—June 3rd, 1901.

Public Health Acts Amendment Act, 1890, Part 5—January 24th, 1898.

Private Streets Works Act, 1892—September 26th, 1904.

Byelaws framed upon the Board's model series have been made on the following subjects:—

Cleansing of footways and pavements	} Approved by the Board, May 26th, 1893.
Nuisances	
* Common lodging-houses	
* New streets and buildings	
* Slaughter-houses	

Removal of house refuse, cleansing earth closets, &c.—January 8th, 1900.

In 1906 a new series of regulations under the Dairies, Cowsheds, and Milkshops Order were adopted.

In view of the number of houses occupied by more than one family, the council would probably find that the "Houses Let in Lodgings, &c.," byelaws would assist them in their sanitary administration.

The *Medical Officer of Health*, Dr. Howell T. Evans, J.P., M.R.C.S. Eng., L.A.H. Dub., D.P.H. Camb., was appointed in 1897 at an annual salary of £40, half of which is repaid by the county council. The salary has remained stationary while the population has doubled. Dr. Evans is also public vaccinator and district medical officer for the Rock district of the Bedwellty Union, and is a certifying factory surgeon; he holds other minor appointments, but he is mainly occupied in private practice as a

* No copies of these byelaws are available for distribution to persons interested in them. Separate copies of each series should be reprinted.

colliery surgeon. Dr. Evans formerly acted as deputy medical officer of health for a number of years. He does not make systematic inspection of his district, but he proceeds forthwith to any place to which his attention has been drawn. For the last two years or so Dr. Evans has been suffering from the effects of a railway accident, and he does not now cover such a large field in some of his public appointments as was formerly the case. His annual reports have not contained very much information as to the sanitary condition of his district.

In a number of the districts in these Monmouthshire valleys public health administration is defective in many respects; * infantile mortality is high; infectious disease is exceedingly prevalent, either constantly or at frequent intervals; measures taken to cope with outbreaks of infectious disease are commonly inefficient, housing conditions are bad, and nuisances are extremely numerous. These conditions call for the appointment of a medical officer of health to devote his whole time to public health work. The necessary personal supervision of the routine work in the health department of a populous district cannot, as a rule, be conducted effectively by a medical officer of health in private practice.

Prior to the appointment of the county medical officer in 1908, an opinion was held in Monmouthshire that the existence of such an officer might obviate the need of whole time medical officers of health for combinations of districts. This view can hardly now be held, as the reports of the Board's medical inspectors, and of the county medical officer himself, plainly show. Moreover, the county medical officer devotes considerable part of his time to work under the education committee, and the remainder is fully occupied in investigating large problems of water supply, sewerage, and other questions affecting the county as a whole, and in periodic inspections of public health administration in the sanitary districts of the county.

The *Inspector of Nuisances*, Mr. F. Hynam, holds the certificate of the Royal Sanitary Institute. He receives an annual salary of £120, half of which is repaid from county council funds. He was appointed in 1908, after acting as assistant inspector since 1900. He is also inspector of workshops, lodging-houses, cowsheds, and slaughter-houses. Mr. Hynam has a thorough knowledge of the district, and has been instrumental in effecting sanitary improvements. The district, however, is not compact, and it is impossible for one inspector of nuisances, without assistance, to perform all the duties which should be undertaken in an area occupied by nearly 19,000 persons, mostly of the labouring classes, whose premises require much personal supervision.

NOTIFICATION AND PREVENTION OF INFECTIOUS DISEASE.

The following table gives the number of notifications and deaths in Bedwellty from certain infectious diseases for the period 1894-1909:—

* See reports of the Board's medical inspectors, numbers 212, 228, 255, and 8, new series, on Nantyglo and Blaina, Abertillery (since provided with a whole time medical officer of health), Ebbw Vale, and Tredegar Urban Districts, respectively, also the quarterly reports of the county medical officer.

Year.	Scarlet Fever.		Diphtheria, including Membranous Croup.		Typhoid Fever, including Continued Fever.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1894	50	1	3	3	4	2
1895	59	2	8	4	22	2
1896	55	2	6	6	4	—
1897	57	—	4	3	14	1
1898	4	—	5	2	3	—
1899	10	—	15	4	11	5
1900	115	3	35	6	5	1
1901	143	3	153	28	15	4
1902	114	6	203	33	9	1
1903	144	3	100	9	29	3
1904	95	3	60	6	23	10
1905	64	4	28	5	8	3
1906	43	—	23	1	13	1
1907	33	2	22	3	12	3
1908	138	—	59	1	11	2
1909 (to Sept. 30th)...	340	4	142	7	2	—

On receipt of a notification certificate,* but not always immediately, the medical officer of health telephones or writes to the inspector of nuisances, who calls to advise the occupants and to give a leaflet of instructions. Parents are verbally instructed to keep their children away from day and Sunday schools, but no intimation is sent to the head teacher or to the school attendance officer. In the absence of such intimation, the school teacher may be placed at a disadvantage in the event of children continuing to attend school contrary to instructions.

Effective isolation in the home, not infrequently overcrowded, is usually impossible of attainment. The infected child plays with its brothers and sisters, not yet infected, walks about the house and garden, and almost certainly comes into contact sooner or later during the infectious period with other children. I visited several houses in which cases were undergoing "home isolation," and in each instance found that effective isolation was impossible. Infectious diseases nursed under these home conditions show a tendency to "run through the whole house," and multiple cases commonly occur.

Infectious disease has been exceedingly prevalent during 1909. In the second quarter of the year 150 cases of scarlet fever were notified, and 138 in the third quarter, while 54 cases of diphtheria were notified in the first quarter, 55 in the second quarter, and 33 in the third quarter.

The isolation hospital is used only for cases of small-pox and typhoid fever.

* Some medical practitioners in the district delay notifying cases; certificates are sometimes not sent in until a batch of them has accumulated. The district council should warn them of the requirements of the Notification Act.

As no steam disinfecting apparatus is available, clothing, &c., is fumigated with formalin and washed; disinfectants are supplied to infected households. In case of typhoid fever and small-pox the premises are fumigated or sprayed with formalin, but in mild cases of scarlet fever and diphtheria disinfection of the house is not practised.

In effect, adequate steps are not taken to prevent the spread of infectious disease which, as is apparent from the above table, is at frequent intervals extremely prevalent in the district.

With a view to limiting the spread of infection, the following administrative measures should in all cases be adopted:—

1. Personal inquiries should be made by the medical officer of health, or by the inspector of nuisances under his direction, and the information obtained should be entered on a form or card and properly filed for reference. Special investigation should be made into the sources of infection and especially into the possibility of the prior occurrence of overlooked cases.
2. Patients incompletely isolated at home should be removed to a properly equipped isolation hospital.
3. Infected premises and articles should be efficiently disinfected.

Isolation Hospital.—In 1902 a temporary hospital was constructed of galvanised iron, lined internally with wood. It is built on an elevated site on Coedymoeth Common, between Cwmsyflog and Bedwellty village. It contains, in one block, two wards each approximately 18 by 18 square feet in area. Taking 13 feet as the greatest permissible height which may be counted, the capacity of each ward is under 4,250 cubic feet. Four beds are provided in each, twice as many as are permissible on the scale of 2,000 cubic feet of air space per bed. Heating is effected by central stoves and artificial lighting by lamps. The ward block also contains a kitchen and a nurses' duty room. The mortuary is a detached building. Administrative quarters are provided in two adjacent cottages occupied by a woman and her husband; the former nurses the patients with trained assistance as required.

The hospital water-closets drain to a cesspool. The hospital is well kept, but in one place at least the floor is seriously affected with dry rot. As cases of only one disease can be isolated at one time the hospital is very far from serving the needs of the district. Extension, therefore, is necessary, or arrangements should be made with the councils of adjacent districts for the provision jointly of a fully equipped hospital. Some 20 beds are necessary for the use of the Bedwellty district.

Considerable sums have been expended in past years in replacing bedding, clothing, &c., destroyed in lieu of disinfection. From 1900 to 1908 the annual expenditure for this purpose has ranged from 12s. to £26, the annual mean being £9 3s. 4d. In the absence of a steam disinfector, which should be provided, there can be no doubt that much bedding and clothing which should have been thoroughly disinfected cannot have been adequately dealt with.

In 1902 five patients suffering from small-pox were admitted to hospital. From 1903 to September, 1909, the annual number of

patients admitted, typhoid fever in each instance, have been 14, 10, 2, 6, 3, 5 and 1 respectively.

The medical officer of the hospital is Dr. D. J. Thomas, of Bargoed, who receives an annual salary of £20.

VITAL STATISTICS.

The following table gives the estimated population, the death- and birth-rates, and the infantile mortality rate for the years 1898 to 1908 :—

Year.	Estimated Population.	Death-rate per 1,000 persons living.*	Birth-rate per 1,000 persons living.	Infantile Mortality per 1,000 births registered.	
				Bedwellty.	Registrar-General's "smaller towns"† of England and Wales.
1898 ...	9,447	15·13	34·50	166	—
1899 ...	9,857	16·13	34·89	180	—
1900 ...	10,212	16·15	32·41	127	—
1901 ...	10,734‡	19·37	41·73	127	—
1902 ...	11,039	21·55	43·57	141	135
1903 ...	11,639	14·09	42·18	108	135
1904 ...	13,069	17·06	42·24	165	154
1905 ...	14,629	16·26	41·15	141	132
1906 ...	16,184	17·23	39·17	184	138
1907 ...	17,319	14·49	38·80	161	122
1908 ...	18,429	16·76	41·40	190	124

* Deaths of residents occurring outside the district in the workhouse, asylums, &c., are not included in the medical officer of health's returns.

† 20,000–50,000 population (1904–1908), 25,000–50,000 (1902 and 1903).

‡ Census population 1901, 9,988.

For purposes of comparison the infantile mortality in the "smaller towns" of the Registrar General has been included, compared with which Bedwellty appears in an unfavourable light.

The advisability of adopting the Notification of Births Act, 1907, and the provision of suitable means for carrying out the objects of this Act have not been considered by the council. In view of the very high infantile mortality in the district, the district council should adopt this Act and should arrange for suitable advice to be given to mothers concerning the nourishment and care of infants by a competent woman or women acting under the direction of the medical officer of health in such cases as he may consider this necessary. By so doing the council will take an important step towards securing reduction of the excessive infantile mortality that now prevails in their district.

The Midwives Act is administered by the Monmouthshire County Council, inspection being effected by means of a certificated midwife. At the time of my visit the county medical officer had no duties in connection with the administration of the Act, but I understand that there is a proposal to bring the work under his

department. An average of less than one death from puerperal fever occurs annually in the Bedwellty district.

Of the 13 registered midwives practising in the district, only one is trained and qualified; five of them are unable to write. One woman's name was removed from the Midwives Roll by the Central Midwives Board during 1909 for misconduct.

RECOMMENDATIONS.

1. The Bedwellty Urban District Council should take steps to secure the services of a whole time medical officer of health in combination with neighbouring districts.
2. The high infant mortality in the district should receive the early attention of the Council; and with a view to aiding in its reduction the Notification of Births Act, 1907, should be adopted, and an appropriate system of administration on the lines set out on page 11 should be initiated.
3. A fully equipped isolation hospital should be provided, adequate for the needs of the district, in combination, if necessary, with other authorities; persons not properly isolated at home should be removed to hospital.
4. A steam disinfecter should be provided.
5. More attention should be paid to the prevention of the spread of infectious diseases, and the steps mentioned on page 10 should be carried out to limit their spread.
6. The water supply of the district should be improved.
7. The district council should provide a trunk sewer for the Rhymney Valley portion of their district in conjunction with the councils of other districts in that valley. When the Sirhowy Valley trunk sewer is completed localities at present inadequately drained and sewered should receive prompt attention.
8. The nuisances occasioned by hand-flushed water-closets should be abated, privies should be abolished, and wherever practicable water-closets substituted for pail-closets.
9. The urban district council should consider the advisability of taking steps under the Housing Acts with a view to securing sufficiency of housing accommodation for the population in their district. Insanitary house property should either be put into habitable condition or closed as the circumstances of each case require.
10. Special attention should be paid to the condition of cowsheds in the district.

I have much pleasure in acknowledging the assistance I received during the course of my inspection from the officers of the council and others, especially from Dr. H. T. Evans, medical officer of health, Mr. F. Hynam, inspector of nuisances, Dr. Rocyn-Jones, county medical officer, and Dr. T. W. Wade, assistant county medical officer.

J. SPENCER LOW.

